

# Snags and Cavity Trees

Hollow trees (cavity trees) and snags (dead, standing trees) are vitally important to many types of wildlife. Eighty-five species of North American birds as well as many mammals, reptiles, and amphibians use cavity trees and snags for cover and for feeding. Tree cavities are important because they provide nesting, roosting, and denning sites for numerous species, from a tiny wren to a squirrel or raccoon to a large black bear. Snags provide areas for foraging, roosting, nesting, and cavity excavation. A woodpecker or brown creeper may search for insects in the flaking bark and decaying wood of a dead tree. The peeling bark of a snag may also provide just the right protection for a roosting Indiana bat or a gray tree frog. The exposed top of a dead tree may even provide a perfect perch for a bald eagle, mourning dove, or great blue heron.

Tree cavities all begin with an injured tree. A large limb may break off in a wind storm, or the tree may be damaged due to fire or a lightning strike, leaving an open wound and allowing the tree to be infected by heart rot fungus. Over time the center of the tree may rot out by itself or woodpeckers or other primary cavity nesters (species that excavate their own tree cavities) will bore out a hole.



*Figure 1. Dead tree tops provide perfect perches for a variety of birds, such as these two immature bald eagles.*

*Eighty-five species of North American birds as well as many mammals, reptiles, and amphibians use cavity trees and snags.*

Thin barked trees are more susceptible to injury than others and therefore are more likely to develop a cavity. Some of the best cavities are often found in large beech and sycamore trees. Some other trees that often tend to develop cavities include black gum, black locust, maples, and sassafras. Some cavity trees may continue to live for many years, since only the interior of the tree has rotted out. Snags, on the other hand, are almost always dead. Snags do not always have cavities in them, but may be potential cavity trees.

The very best way to maintain these valuable habitat components is to leave naturally occurring snags and den trees alone. This is no problem where timber management is not being implemented. In those situations, the only good reason for cutting down a snag or den tree is when it poses a threat to personal safety or property. However, when timber management is being conducted, maintaining adequate numbers of suitable snags and



Figure 2. Old, mature to overmature forests with snags and wolf trees are beneficial to a variety of wildlife.



*... forest management plans should include some uncut areas where old, over-mature trees are left unharvested, or identify some areas for a long (>100 year) harvest rotation.*

cavity trees requires more planning. The highest densities of snags occur in young regenerating hardwood stands (approximately 35 years old) and in very old hardwood stands (100+ years old), with the largest and most beneficial snags being found in the old stands. For this reason, forest management plans should include some uncut areas where old, over-mature trees are left unharvested, or identify some areas for a long (>100 year) harvest rotation. Care should also be taken to protect cavity trees and snags during timber management operations whenever possible.

Trees can also be intentionally deadened, by “girdling,” to produce snags. The easiest way to girdle a tree is to make at least two chainsaw cuts 2 inches deep all the way around the circumference of the tree trunk. To make sure that these cuts don’t seal up, you may also want to chip out the area in between the cuts to a depth of 1 inch with an ax. Another method that can be used is frill girdling, which involves making a complete ring of downward ax cuts 1–2 inches deep into the tree and then applying a herbicide such as Garlon to the cut area. This can be

accomplished easily during timber stand improvement or thinning. Some trees that have been marked for removal can be girdled instead of being cut down. Deadening the tree produces the same desired effect of opening up the canopy and reducing competition with crop trees that would be achieved by cutting the tree down.

Even the smallest snags can contribute to quality wildlife habitat. However, when girdling to produce snags it would be more efficient to target trees that are at least 6 inches diameter at breast height, and even larger. This is because larger snags can potentially be used by more species of wildlife. Even those species that use smaller snags may actually prefer the larger ones. There is no specific number of snags that should be maintained or produced, because the optimum number of snags required by different wildlife species varies. Generally 6 snags per acre could be considered an absolute minimum while as many as 30 per acre is an optimum objective.

Unfortunately, we cannot effectively produce man-made den trees like we can snags, although girdled trees may become cavity trees in time. For this reason, protecting existing cavity trees is crucial. In areas where cavity trees are limited or absent and cavity nesting species are desired, carefully designed and placed nest boxes\* can be used to provide alternate nesting and denning sites.

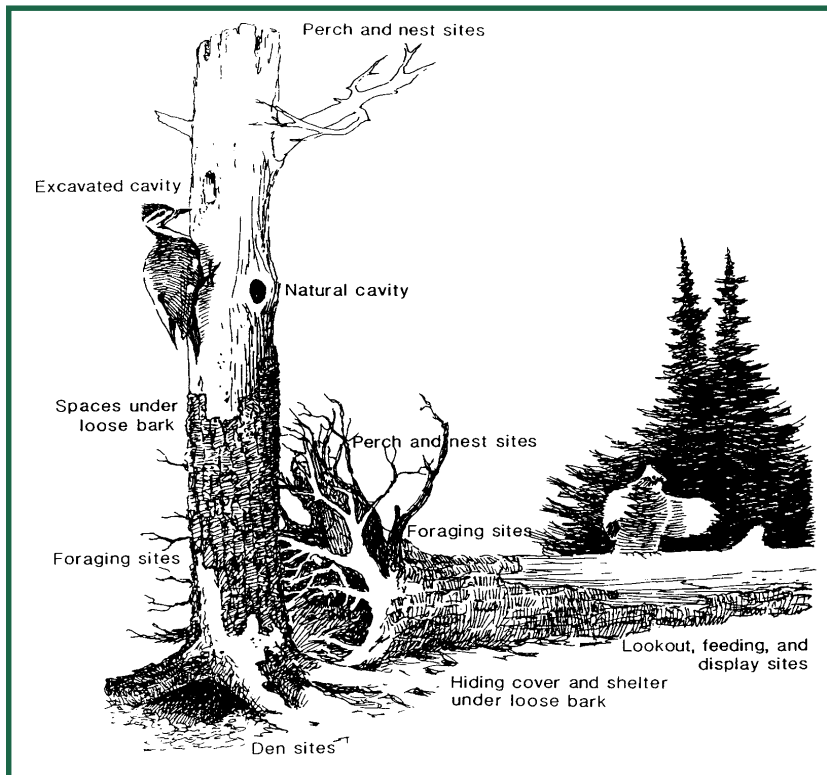


Figure 3. Examples of uses of woody material by wildlife.

*Tree cavities all begin with an injured tree.*



*Trees can be intentionally deadened, by "girdling," to produce snags.*

## SUMMARY OF OPTIONS:

Maintain areas of mature forest  
Protect existing snags and  
cavity trees of any size  
Produce snags (and potentially  
cavity trees) by girdling trees  
at least 6 inches in diameter



*Figure 4. Standing dead trees provide cover and feeding for many mammals, reptiles and amphibians.*

### Planning for My Property



The Kentucky Department of Fish and Wildlife Resources does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities.

If you feel you have been discriminated against by this department, contact the Kentucky Department of Fish and Wildlife Resources Commissioner's Office, #1 Game Farm Road, Frankfort, KY40601.

#### **\*Related *Habitat How To* references:**

Nesting Structures

Timber Stand Improvement